LOS ALAMOS SCIENTIFIC LABORATORY
UNIVERSITY OF CALIFORNIA
LOS ALAMOS, NEW MEXICO 87544
TELEPHONE:

A 88-062
34

OFFICE MEMORANDUM

TO : W. E. Ogle, J-DO

DATE: May 8, 1972

UNIQUE DOCUMENT #SAC20011257 0000

THIS DOCUMENT CONSISTS OF 4 PAGE(S)

FROM : H. Hoerlin, J-DO

SUBJECT: EYEBURN FOR SEVERAL YIELDS - THERMAL AND OVERPRESSURE DATA

SYMBOL : J0R-72-16

ROUGH DRAFT

I have made a series of eyeburn calculations using as inputs the measured outputs from 4 Dominic events (Derksen, NOL-TR-72-42), assuming slant distances of 20, 40 and 80 nm, target at 40,000 ft altitude, dark and light adapted eye. The safe dosages are taken from LA-4651, by J. Zinn, Figure 8; these thresholds are a bit lower (more conservative) than those proposed during a post Dominic eyeburn meeting held in Los Alamos in 1965. Air transmission was taken with $\beta = 0.025/km$, corresponding to a visibility better than "very clear" ($\beta = 0.06/km$) and not quite "exceptionally clear" ($\beta = 0.014/km$). The conclusions are listed in Tables I and II; they are conservative. Various assumptions were made, the worst case assumes a 150 msec blink at second max. A more detailed memo will be submitted shortly. Thermal and overpressure data are shown in Table III.

Distribution:

Cy. 1RD - W. E. Ogle, J-DO
2RD - D. M. Kerr, J-10
3RD - J. S. Malik, J-DO
4RD - H. Hoerlin, J-DO

[redacted] laws [redacted] 793 and 794, the transmission or revelation of which in any manner to an unauthorized person is prohibited by law.

GROUP 1
EXCLUDED FROM AUTOMATIC
DOWNGRADING AND
DECLASSIFICATION

FORMERLY RESTRICTED DATA
Handle as Restricted Data in Foreign Dissemination
Section 144b, Atomic Energy Act, 1954

DEPARTMENT OF ENERGY DECLASSIFICATION REVIEW

1ST REVIEW-DATE: 8/31/98	DETERMINATION (CIRCLE NUMBER(S))
AUTHORITY: DADC DDO	1. CLASSIFICATION RETAINED
NAME: A E EVANS	2. CLASSIFICATION CHANGED TO
2ND REVIEW-DATE: 9/2/98	3. CONTAINS NO DOE CLASSIFIED INFO
AUTHORITY: DDO	4. COORDINATE WITH:
NAME: L P Schmidt	5. CLASSIFICATION CANCELED
	6. CLASSIFIED INFO BRACKETED
	7. OTHER (SPECIFY):

[redacted]

975A20C000104
TMT-72-233

TABLE II

HARLEM, 1100 kt

t_{1max} = 1.7 msec t_{min} = 95 ms t_{2max} ~ 1 sec

Aircraft at 40,000 ft

Slant Range naut. m.	Pulse msec	Image diam. microns	Dose, cal/cm^2 night	day	safe
20	0 - 2	100	.6	.1	.1
20	0 - 10	150	1.3	.2	.1
20	0 - 150	500	.3	.04	.4
20	850 - 1000	900	4.0	.6	.4
40	0 - 2	50	.4	.07	.1
40	0 - 10	75	.8	.1	.1
40	0 - 150	250	.2	.03	.7
40	850 - 1000	450	2.4	.4	.5
80	0 - 2	25	.2	.03	.2
80	0 - 10	40	.3	.05	.4
80	0 - 150	125	.1	.02	1.5
80	850 - 1000	225	.9	.15	.7